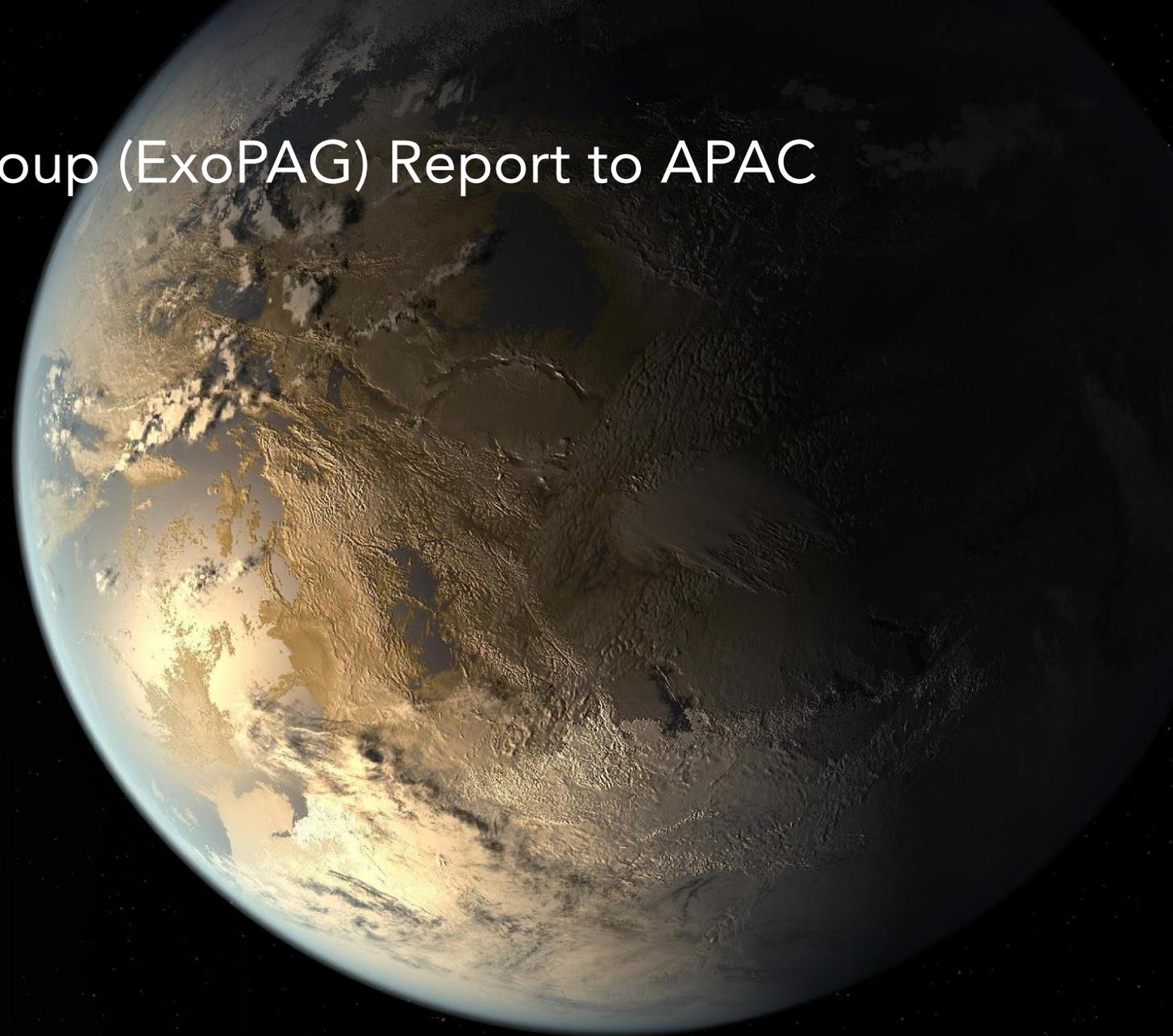


# Exoplanet Program Analysis Group (ExoPAG) Report to APAC

Michael Meyer (U. Michigan)  
Chair, ExoPAG Executive Committee

July 20, 2022



# Exoplanet Program Analysis Group: What is that anyway?

## ExoPAG Terms of Reference

Exoplanet Program Analysis Group  
Chartered by the Astrophysics Division

1. Articulate & prioritize science drivers for Exoplanet Exploration research;
2. Evaluate capabilities of potential missions to achieve program goals;
3. Evaluate ExEP activities with broad community input;
4. Articulate & prioritize new mission technologies; and
5. Provide findings on all related program activities including:
  - ground-based observing,
  - theory and modeling programs,
  - laboratory astrophysics,
  - suborbital investigations,
  - data archiving and
  - community engagement.

# ExoPAG Executive Committee

*Michael Meyer (Chair)*

*University of Michigan*

Natasha Batalha

NASA-Ames

Jacob Bean

The University of Chicago

Michael Bottom

The University of Hawaii

Ofer Cohen

University of Massachusetts Lowell

Knicole Colon

Goddard Space Flight Center

John Debes

Space Telescope Science Institute

*Tiffany Kataria*

*JPL/Caltech*

Ilaria Pascucci

The University of Arizona

*Josh Pepper*

*Lehigh University*

*Dmitry Savransky*

*Cornell*

Laura Schaefer

Stanford University

Douglas Hudgins (Astrophysics)

NASA HQ

Hannah Jang-Condell (ExEP DS)

NASA HQ

Doris Daou (Planetary Liaison)

NASA HQ

Richard Eckman (Earth Liaison)

NASA HQ

Gaylan Fowler (Heliophys Liason)

NASA HQ

*Thank you for your service...*

# ExoPAG Executive Committee

<i>Michael Meyer (Chair Emeritus)</i>	<i>University of Michigan</i>
Natasha Batalha	NASA-Ames
Jacob Bean	The University of Chicago
Michael Bottom	The University of Hawaii
Ofer Cohen	University of Massachusetts Lowell
Knicole Colon	Goddard Space Flight Center
John Debes	Space Telescope Science Institute
<i>Diana Dragomir</i>	<i>U. New Mexico</i>
<i>Erin May</i>	<i>JHU/APL</i>
<i>Bertrand Mennesson</i>	<i>JPL/Caltech</i>
<i>Ilaria Pascucci (Chair)</i>	<i>The University of Arizona</i>
Laura Schaefer	Stanford University
John Wisniewski	U. Oklahoma
Douglas Hudgins (Astrophysics)	NASA HQ
Hannah Jang-Condell (ExEP DS)	NASA HQ
Doris Daou (Planetary Liaison)	NASA HQ
Richard Eckman (Earth Liaison)	NASA HQ
Gaylan Fowler (Heliophys Liason)	NASA HQ

*Welcome to our newest members!*

June 11, 2022

Session 1 (Chair: Michael Meyer)	Speaker	Time (PDT)	Duration	End
Welcome	Michael Meyer	9:00 AM	0:15	9:15 AM
NASA Headquarters Exoplanet Exploration Program	Hannah Jang-Condell	9:15 AM	0:30	9:45 AM
Exoplanet Exploration Program (ExEP) Office	Christine Moran	9:45 AM	0:15	10:00 AM
ExEP Science	Eric Mamajek	10:00 AM	0:20	10:20 AM
NExSci and NASA Exoplanet Archive Update	David Ciardi	10:20 AM	0:20	10:40 AM
<b>BREAK (30 min)</b>		10:40 AM	0:30	11:10 AM
Early Career Talk: Novel Methylated Biosignatures: Outcomes of a General Metabolic Process as a New Class of Biosignatures	Michaela Leung	11:10 AM	0:15	11:25 AM
Early Career Talk: Precise Dynamical Masses of New Directly Imaged Companions from Combining Relative Astrometry, Radial Velocities, and Hipparcos-Gaia eDR3 Accelerations	Emily Rickman	11:25 AM	0:15	11:40 AM
ExEP Technology Update	Brendan Crill	11:40 AM	0:30	12:10 PM
<b>LUNCH BREAK (90 min)</b>		12:10 PM	1:30	1:40 PM
Session 2 (Chair: Knicole Colon)	Speaker	Time (PDT)	Duration	End
Early Career Talk: On the nature of small planets orbiting low-mass stars	Rafael Luque	1:40 PM	0:15	1:55 PM
Where We Explore	Anjali Tripathi	1:55 PM	0:15	2:10 PM
Exoplanets with Gaia	Timothy Brandt	2:10 PM	0:30	2:40 PM
SIG 3 Update: Exoplanet/Solar System Synergies	Laura Mayorga (remote share)	2:40 PM	0:30	3:10 PM
<b>BREAK (30 min)</b>		3:10 PM	0:30	3:40 PM
Session 3 (Chair: Diana Dragomir)	Speaker	Time (PDT)	Duration	End
Overview of NExSS Working Groups	Dawn Gelino	3:40 PM	0:15	3:55 PM
NExSS Quantitative Habitability	Rory Barnes	3:55 PM	0:20	4:15 PM
Coronagraph Innovation	Rus Belikov/Kevin Fogarty (remote share)	4:15 PM	0:20	4:35 PM
<b>Adjourn</b>		4:35 PM		

# ExoPAG 26 June 11-12, 2022

## AAS #240, Pasadena, CA

June 12, 2022

Session 4 (Chair: Bertrand Mennesson)	Speaker	Time (PDT)	Duration	End
Early Career Talk: First results from the Distant Giants survey: 10 new long-period companions	Judah Van Zandt	9:00 AM	0:15	9:15 AM
Recap of Precursor Science Workshop	Terri Brandt (remote share)	9:15 AM	0:15	9:30 AM
ExoSET- Exoplanet Science Evaluation Team	Rhonda Morgan	9:30 AM	0:20	9:50 AM
Great Observatories Maturation Program (GOMaP) Interfaces to ExoPAG	Gary Blackwood	9:50 AM	0:15	10:05 AM
GOMaP Stage 1 Technology Activities	Nick Siegler	10:05 AM	0:20	10:25 AM
<b>BREAK (20 min)</b>		10:25 AM	0:20	10:45 AM
Session 5 (Chair: M. Meyer)	Speaker	Time (PDT)	Duration	End
Business Meeting: Introduce incoming Chair, Discuss New SIGs/SAGs, Discuss Potential New Findings, Review progress on past suggestions, propose new suggestions, Announcements, etc.		10:45 AM	1:30	12:15 PM
<b>Adjourn</b>		12:15 PM		

June 12, 2022

Joint Program Analysis Group (PAG) Session 3:00-5:00 PDT (Sheraton Pasadena Hotel - Piazza Room)

**ExoPAG 26**  
**Code of Conduct**  
**June 11-12, 2022**

Attendees of ExoPAG 26 are expected to abide by the following Code of Conduct.

The organizers are committed to making this meeting productive and enjoyable for everyone, regardless of gender, sexual orientation, disability, physical appearance, body size, race, nationality or religion. We will not tolerate harassment or bullying of participants in any form. Please follow these guidelines:

- Behave professionally. Harassment, bullying, and sexist, racist, or exclusionary comments or jokes are not appropriate. Harassment includes sustained disruption of talks or other events, inappropriate physical contact, sexual attention or innuendo, deliberate intimidation, stalking, and photography or recording of an individual without consent. It also includes offensive comments related to gender, sexual orientation, disability, physical appearance, body size, race or religion.
- All communication should be appropriate for a professional audience including people of many different backgrounds. Sexual language and imagery is not appropriate.
- Be kind to others. Do not insult or put down other attendees. Critique ideas, not people.
- If participants wish to share photos or contents of talks/slides of any attendee or speaker on social media, we ask that they first get permission.

Participants asked to stop any inappropriate behavior are expected to comply immediately. Attendees violating these rules will be asked to leave the event at the sole discretion of the organizers.

Any participant who wishes to report a violation of this policy is asked to speak, in confidence, to Hannah Jang-Condell ([hannah.jang-condell@nasa.gov](mailto:hannah.jang-condell@nasa.gov)) or Michael Meyer ([mrmeyer@umich.edu](mailto:mrmeyer@umich.edu))

# ExoPAG Recent Activities (since March APAC)

- Reviewing proposals for SAGs/SIGs
- New APD Cross PAG activities:
  - Astro 2020 Discussions (PAG EC Chairs in frequency contact).
  - Cross PAG SAG on URM in APD Space Science (R. Hickox).
  - Cross PAG SAG on Great Observatories (G. Tremblay).
- ExoExplorers 2022 program on-going (T. Kataria).
- Report out to PAC in June.
- Supporting GOMAP Precursor Science Workshops.
- New actions re: Astro 2020 (x-PAG SAG in formulation).
- Review new proposed findings and activities.

*PLANET HOP* FROM  
**TRAPPIST-1**  
Credit: NASA

# Current Status of SAGs and SIGs

Close Year	SAG or SIG	Title	Lead
----	SIG 2	Exoplanet Demographics (on-going)	Christiansen & Meyer
----	SIG 3	Exoplanet Solar System Synergies (on-going).	Meadows & Mandt
----	SAG 21	Stellar Contamination on Transit Spectra (final report accepted)	Rackham & Espinoza
----	SAG 22	Exoplanet Host Properties (final report accepted)	Pepper, Stark, & Hinkel
----	SAG 23	Debris Disk Properties of Exoplanet Hosts (initiated)	Debes, Rebollido, & Hasegawa

# ExoPAG 26 Business Meeting: June 12 10:45-12:15 pm PDT

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- Update on new SAG23 (I. Rebolledo).
- Voted on proposed finding concerning XRP funding:
  - 13 % success rate doesn't support young diverse community or efficiently make progress towards NASA's strategic goals.
  - 34 in favor, 0 against, 1 abstention.
- New ideas for ExoPAG priorities and activities:
  - Support for new Cross PAG SAG in support of GOMAP Activities for IROUV.
- Review of progress on past suggested actions.
- Announcements for the community.
  - TDAMM (J. Pepper), and new Astrophysics Mission School!
- Executive Committee interested in considering new format for meetings including better use of shared time together (and better presentations).

***Finding - On the benefit of increased funding for the Exoplanet Research Program:***

*Whereas the Decadal Survey on Astronomy and Astrophysics 2020 emphasizes exoplanet research and has identified as a priority science area the search for habitable worlds, and whereas the exoplanet research community has significantly grown over the past years and attracted many young scientists.*

*We find that the proposal success rate in the Exoplanet Research Program falls well below the success rate of other comparable programs which can potentially hurt the retention and training of young scientists, US leadership in exoplanet science, and the efficiency with which NASA can achieve its strategic goals.*

### ***Cross-PAG SIG in support of GOMAP Activities for IROUV***

Beneficial to APD, conducting analyses on scientific and related technical issues that would inform the GOMAP, potentially making it more efficient (in time as well as resources spent per value-added).

The SIG would take full advantage of work done previously by STDTs, and other entities such as the NASA Exoplanet System Science (NExSS) research coordination network.

It is important that all PAGs be included in this activity with coordination by a five-person team, comprised of members of ExoPAG, COPAG, and PhysPAG, with membership open to all three PAGs.

The SIG would conduct analyses coordinated and prioritized by the leadership team.

Specific analyses would result in technical reports addressed to APD in time-limited activities.

We expect that such a cross-PAG SIG would be useful to NASA APD for several years.

***ExoPAG Actions Requested from APAC:***

The ExoPAG has no requested actions for the APAC at this time, apart from consideration of the proposed cross-PAG SAGs on “barriers to participation” and “simultaneous great observatories”.

However, we expect to propose a cross-PAG SIG in support of GOMAP activities for IROUV at the APAC meeting in October. Feedback on this proposal is welcome.